RESET SMET Datalogger Installation

I. Purpose:

This procedure describes the procedures necessary for installing a SMET datalogger.

II. Cautions and Hazards:

- A high-quality ground **must** be connected to the datalogger case before continuing with the rest of the procedure. If the datalogger does not have a good ground reference, a significant offset on the A/D measurements will occcur.

III. Requirements:

- A MET datalogger
- Sensors:
  - Vaisala Temperature/Relative Humidity Probe that has been calibrated within the past year.
  - Aspirator with the radiation shield already installed.
  - Adapter ring, locking nut, and PVC cover.
  - Two R.M. Young Wind Monitors.
  - Mini-ORG Optical Precipitation Gauge.
  - Calibration report for each sensor.
- Notebook PC with RS232/EIA422/Impulse adapter cable.
- Checkout equipment:
  - Insulated box (e.g., an ice chest), a Dewer flask, and a watertight cover for T/RH probe (e.g., a balloon).
  - Reference digital thermometer.
  - Vaisala HMI31/HMP35 Digital Temperature/Relative Humidity Meter.
  - Anemometer drive.
  - Vane angle fixture.
  - Reference digital barometer.

IV. Procedure:

A. Steps:

1. Connect power to the datalogger.
2. Using the RS232/EIA422/Impulse adapter, connect a notebook computer to the datalogger.
3. Verify that the ZENO has the proper SMET software configuration or upload the proper version into the ZENO. The naming convention for the configuration file is METsssn.txt where "**sss**" is the three-digit serial number of the datalogger and "**n**" is an alphabetic version number, e.g., MET300a.txt is the first SMET configuration version for datalogger serial number 300.
4. Connect the sensors to the datalogger; refer to Attachment 1, the SMET Sensor Configuration Table.
5. Follow procedure PRO(TRH)-004. To determine the calibration factor for the air temperature probe and to check the Temperature – Relative Humidity Probe using the Vaisala Digital Temperature – Relative Humidity Meter.
6. Use a digital voltmeter to measure the input power voltage. Adjust the calibration factor in the Sensor Menu (Sensor 10) to obtain the proper external battery voltage reading. View the latter by selecting the Scaled Sensor Data option from the ZENO Test Menu.
7. Enter the calibration coefficients for the sensors into the ZENO configuration; refer to the SMET Sensor Configuration Table, Attachment 1.
8. Follow procedures PRO(WND)-005. to check the Wind Monitors by using the Anemometer Drive and the Vane Angle Fixture.
9. Follow procedure PRO(ORG)-004. to check the operation of the rain gauge.
10. Verify the SMET Barometric Pressure Sensor by comparison with the Reference Digital Barometer.
11. Verify that the ZENO is measuring all signals properly by using the Test Menu and Output Message.
12. Verify that the ZENO is logging data using the Data Retrieval Menu.
13. If any change is made in the software configuration, e.g., a different calibration for a sensor, update the Configuration Version Number in the logger.

14. Save the configuration to EEPROM.
15. If there was any change in the SMET software configuration, download the current configuration to the notebook computer using the naming convention given in step 3 above.
16. Disconnect the notebook computer and connect the logger to ADaM.
17. Download the current ZENO configuration file to ADaM.
18. Record the date, start-time, end-time, and any comments in the site operations log.
19. Enter a tale of the serial numbers and calibrations for the sensors connected to the SMET datalogger into the appropriate logbook.
20. Send a copy or a listing of the sensor serial numbers and the configuration file to the instrument mentor.

V. References:

1. Hart, Dick.

VI. Attachments:

1. SMET Sensor Configuration Table.

Attachment 1. SMET SENSOR CONFIGURATION TABLE

When installing or changing the following sensors or instruments, the calibration coefficients need to be written into the appropriate ZENO Sensor Menu. The calibration coefficient for the air temperature sensor is in the ZENO Process Menu. Details on determining and changing this coefficient are discussed separately.

Sensor or Instrument	Designation	Sensor Menu No.	Connector No.
Wind Speed 1	WSPD1	1	3
Wind Direction 1	WDIR1	2	3
Wind Speed 2	WSPD2	3	4
Wind Direction 2	WDIR2	4	4
Relative Humidity	RH	7	2
Optical Rain Gauge	R-RATE	8	1